Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application.

HSML (GMD)

Listing of Claims:

1. (Currently amended) A glass for laser processing that is processed through laser beam irradiation,

wherein the glass for laser processing has a composition that satisfies the following relationships:

 $40 \le M[NFO] \le 70$;

 $5 \le (M[TiO_2]) \le 45$; and

 $5 \le M[NMO] \le 40$,

where M[NFO], M[TiO₂], and M[NMO] denote the content by percentage of network forming oxides (mol%), that of TiO₂ (mol%), and that of network modifying oxides (mol%), respectively, and

the composition essentially is free from Y₂O₃.

2. (Original) The glass for laser processing according to claim 1, wherein the network forming oxides are at least one oxide selected from SiO₂ and B₂O₃, the network modifying oxides are at least one oxide selected from alkali metal oxides and alkaline earth metal oxides, and the composition further satisfies the following relationship:

$$5 \le (M[TiO_2] + M[Al_2O_3]) \le 45,$$

where M[Al₂O₃] denotes the content by percentage of Al₂O₃ (mol%).

3. (Original) The glass for laser processing according to claim 2, wherein a value f_m defined by the following formula is 1.35 or lower:

$$f_m = \left(\sum x_i C_i Z_i / (r_i + r_0)^2 \right) / \sum x_i C_i$$

where x_i denotes a molar fraction for which oxides (i) containing cations (i) other than alkali metal ions and alkaline earth metal ions account in the composition; C_i indicates the number of the cations (i) included in composition formulae of the oxides (i); Z_i denotes valences of the

cations (i); and r_i and r_0 indicate values expressing ion radii of the cations (i) and oxide ions by angstrom, respectively.

4. (Original) The glass for laser processing according to claim 2, wherein a value F_m defined by the following formula is 400 kJ·mol⁻¹ or lower:

$$F_m = \sum x_i C_i E_{di} / \sum x_i C_i N_i,$$

where x_j denotes a molar fraction for which oxides (j) other than alkali metal oxides and alkaline earth metal oxides account in the composition; C_j indicates the number of cations (j) included in composition formulae of the oxides (j); E_{dj} denotes dissociation energy of the oxides (j) expressed with a composition ratio of the cations (j) being 1; and N_j indicates the number of oxide ions coordinated to the cations (j) in the oxides (j).

- 5. (Original) The glass for laser processing according to claim 4, satisfying a relationship of $(F_m/\alpha) \le 0.13$ when the value F_m and an absorption coefficient α of the glass for laser processing are expressed by the same unit.
- 6. (Original) The glass for laser processing according to claim 2, wherein the glass for laser processing is composed essentially of SiO₂, TiO₂, and at least one oxide selected from the alkali metal oxides and alkaline earth metal oxides, and the number of Si-O-Ti bonds per SiO₄ unit is at least 0.4.
- 7. (Original) The glass for laser processing according to claim 2, wherein the glass for laser processing is composed essentially of SiO₂, TiO₂, and at least one oxide selected from the alkali metal oxides and alkaline earth metal oxides, and satisfies the following relationships:

$$N_{BO}^{I}/\alpha \le 11 \times 10^{-6}$$
 cm when $M_{Si}N_{NBO}^{I} - 2M_{Ti} > 0$; and

$$N_{BO}/\alpha \le 11 \times 10^{-6}$$
 cm when $M_{Si}N_{NBO}^{I} - 2M_{Ti} \le 0$,

where M_{Si} and M_{Ti} denote molar fractions of Si and Ti contained in the glass for laser processing, respectively; N_{BO}' and N_{NBO}' indicate the number of bridging oxygen atoms and the number of non-bridging oxygen atoms, respectively, in a glass structure that is free from Ti; α denotes an absorption coefficient (unit: cm⁻¹) of the glass for laser processing; and N_{BO} indicates the number

of oxygen atoms, per SiO₄ unit, that each still is cross-linking two Si atoms even after introduction of Ti.

8. (Currently amended) A glass for laser processing that is processed through laser beam irradiation,

wherein the glass for laser processing has a composition that satisfies the following conditions:

 $40 \le M[SiO_2] \le 60$;

 $10 \le M[Al_2O_3] \le 20;$

 $10 \le M[TiO_2] \le 20$; and

 $10 \le M[MgO] \le 35$,

where M[SiO₂], M[Al₂O₃], M[TiO₂], and M[MgO] denote the content by percentage of SiO₂ (mol%), that of Al₂O₃ (mol%), that of TiO₂ (mol%), and that of MgO (mol%), respectively, and the composition essentially is free from Y₂O₃.

- 9. (New) The glass for laser processing according to claim 1, wherein the glass consists essentially of TiO₂, at least one oxide selected from a group consisting of SiO₂, B₂O₃, GeO₂, P₂O₅, and ZrO₂, and at least one oxide selected from a group consisting of alkali metal oxides, alkaline earth metal oxides, ZnO, Ga₂O₃, SnO₂, In₂O₃, La₂O₃, Sc₂O₃, CeO₂, and MnO₂.
- 10. (New) The glass for laser processing according to claim 9, wherein the glass further contains at least one oxide selected from a group consisting of Sb₂O₃ and Al₂O₃.
- 11. (New) The glass for laser processing according to claim 1, wherein the glass consists essentially of TiO₂, at least one oxide selected from a group consisting of SiO₂, B₂O₃, GeO₂, P₂O₅, and ZrO₂, and at least one oxide selected from a group consisting of alkali metal oxides and alkaline earth metal oxides.
- 12. (New) The glass for laser processing according to claim 11, wherein the glass further contains at least one oxide selected from a group consisting of Sb₂O₃ and Al₂O₃.

- 13. (New) The glass for laser processing according to claim 8, wherein the glass consists essentially of 40 to 60 mol% of SiO₂, 10 to 20 mol% of Al₂O₃, 10 to 20 mol% of TiO₂, 10 to 35 mol% of MgO, 0 to 5 mol% of alkali metal oxides, and 0 to 10 mol% of alkaline earth metal oxides other than MgO.
- 14. (New) The glass for laser processing according to claim 13, wherein the glass further contains at least one oxide selected form a group consisting of Sb₂O₃ and CeO₂.